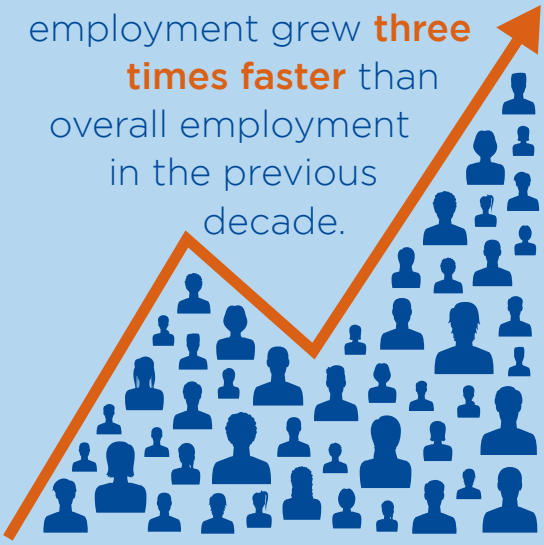
MINNESOTA
Water Technology Industry

Water technology industry employment grew **three times faster** than overall employment in the previous decade.



Minnesota had more than
$870 million
in water-related technology exports.

Average **annual wages** in the water technology industry were
27% higher
THAN THE STATE AVERAGE.


PUBLIC FACILITIES AUTHORITY

13,500
Water Industry Employees

$885M
Water-Related Payroll

3rd
Per Capita Water-Tech Exports

10th
Nationally in Water Patents

MPCA

Minnesota's water technology industry

Bringing clean water to the world: Minnesota's water technology industry

Access to clean water is a global concern. The need is growing for water technology products and services to address environmental degradation as well as resource constraints, and Minnesota's growing water technology industry is uniquely positioned to meet it. Minnesota ranks in the top 10 states for patents and exports for services and products that increase water use efficiency, support water reuse and treat drinking water. This leadership results from the synergy of entrepreneurs, cutting edge research and development, a world-class university system, and a significant presence of industries in state.


TONKA WATER

Minnesota's water technology industry includes a variety of small and large companies that create or provide products or services to improve the use, quality and flow of water. Industry activity in the state includes manufacturing; research and development; management, sales and distribution of water-related products, components and services; and conservation, monitoring and management of water resources.

Types of Industries	Products & Services	Examples in Minnesota
Treatment Products & Services	Filtration/purification, disinfection, desalination, aeration, contaminant detection	**Minnepura Technologies**, launched in 2014, uses bacteria-based biotechnology to purify contaminated water. This technology is based on work by University of Minnesota researchers.
Infrastructure Products & Services	Pumps, pipes, tile drainage, water & sewer line construction, agricultural water management	**IrriGreen** manufactures landscape irrigation systems that use digital technology to save water.
Efficiency Products & Services	Meters and controls, leak detection, water conservation, energy efficiency, low-flow fixtures	**Water Meter Solutions** manufactures sensors to detect leaks in toilets and wirelessly signal a maintenance crew.
Public Water Utilities	Water & wastewater treatment facilities, water quality monitoring, stormwater management, watershed districts	**Chisago Soil & Water Conservation District** is a local government unit that manages natural resources.

Water technology and innovation in Minnesota

Water-Enabled Industries

In addition to companies that create and sell water technology services and products, Minnesota has abundant water. This water is part of what makes Minnesota competitive for business. Water-intensive industries include agriculture, fishing, manufacturing, food production microbrewing, mining and shipping.

JEFFERY THOMPSON, MPR

3M offers technology that allows utilities to insert a robotic spray head into a water transmission line and apply a liner that helps prevent corrosion and tuberculation and seals cracks, pinholes and pitting. The pipe can often be reinstated in a single day. This technology has tremendous potential: The U.S. Environmental Protection Agency estimates U.S. municipalities will need to spend $247.5 billion over the next 15 years to fix deteriorating water pipes.

3M™ Scotchkote™ Pipe Renewal Liner 2400

TONKAWATER
Trusted systems. Resourceful thinking.

Over the past 59 years, Tonka Water designed, manufactured and installed more than 2,300 individually designed water treatment systems for municipalities across North America.

Ecolab is a global leader in water, hygiene and energy technologies and services. In 2014, Ecolab partnered with the Cold Spring, Minnesota, plant of Gold'n Plump to implement an innovative poultry washing process that saved the company 68 million gallons of water.

Dow Water & Process Solutions provides innovative technology-based solutions to a broad spectrum of water issues, including making seawater fit for human consumption and reducing and reclaiming water used in industrial processing.

Pentair

Pentair designs and manufactures advanced technologies to help customers produce more food, energy, and efficiencies from each drop of water. For instance, since 2005, Pentair's pool pumps alone have saved enough kilowatts of energy to power 548,000 homes for one year.

Economic impact of Minnesota's water industry

Industry Growth

Minnesota's water industry employed 13,500 workers in the first quarter of 2014. Industry growth of 13 percent between 2004 and 2014 was three times faster than overall state employment growth of 4 percent.

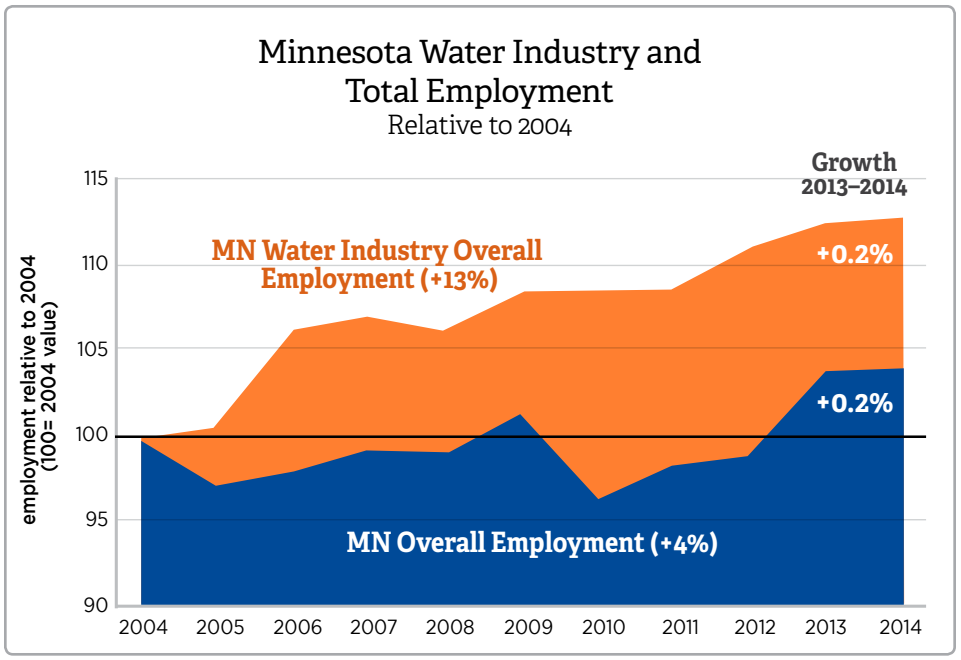
What do water tech businesses look like?

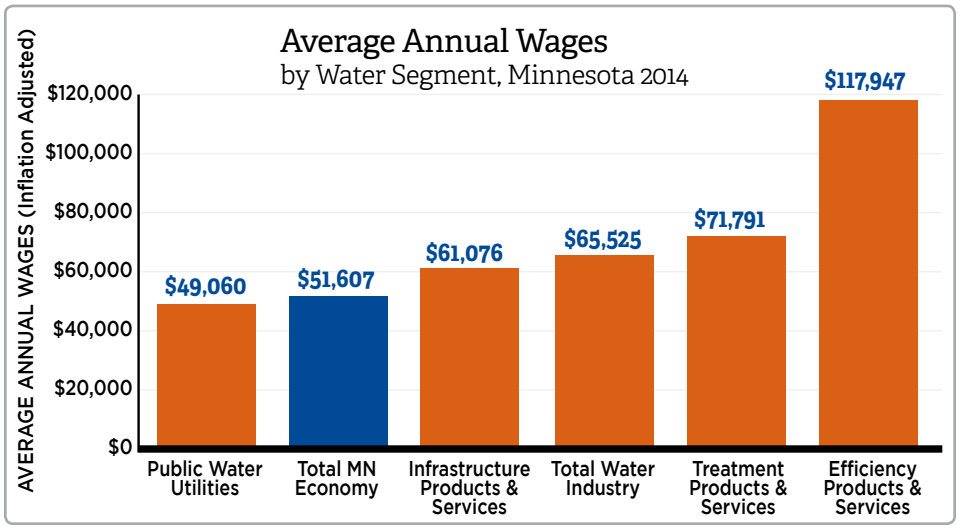
- Minnesota has more than 1,000 individual water business locations.
- About 80 percent of Minnesota water establishments have 10 or fewer employees.
- About 97 percent of establishments have fewer than 50 employees.
- The remaining 3 percent are large firms that comprise nearly half of the total water industry employment.

Wages

Wage data is one way to evaluate the potential for industry growth to raise the living standards of hard-working Minnesotans. Minnesota water technology firms paid more than $885 million in wages in 2014, up 15 percent from 2004 (adjusted for inflation). Average annual wages in the water industry were $65,500 in 2014, or 27 percent higher than the statewide average annual wage of $51,600. As this industry grows, it will open additional good jobs to Minnesotans.

Workers in the water technology industry tend to have science, engineering or facilities management backgrounds. Minnesota has a particularly high concentration of water treatment plant operators, hydrologists and filtering machine operators. These water-related occupations offer a variety of opportunities for Minnesotans with all levels of education. Several water-related occupations need only a high school diploma or associate degree, while others require a bachelor's degree or higher. A below-average concentration of engineers in Minnesota may indicate a workforce development opportunity in the state.





Leading in innovation

Research in Action:
In 2013, **American Peat Technology** signed an agreement with the University of Minnesota Duluth's Natural Resources Research Institute. Together, these partners are exploring new ways to use peat to remove pollutants from mine water.

Innovation is crucial to meet demand for products that address global water challenges

PATENTS

Minnesota universities and companies develop new technologies, processes and materials that allow industries to operate more cleanly and efficiently. Home to some of the nation's top researchers and inventive firms, the state ranked 10th in water technology patents and third in patents per capita in 2014.

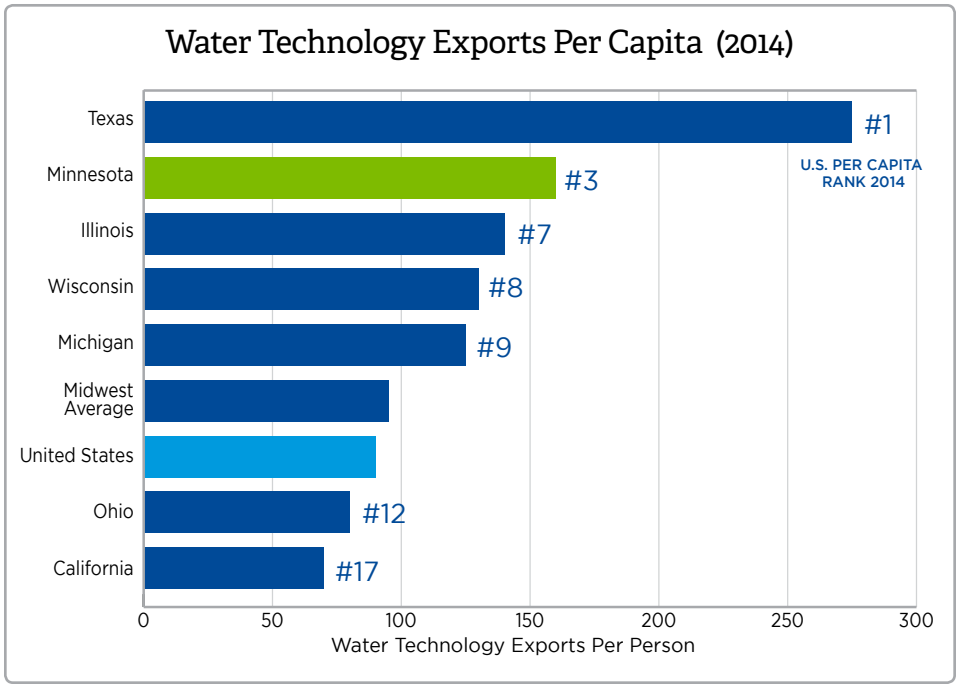
EXPORTS

Minnesota is one of the top water-technology exporting states. With more than $870 million in international water-related technology exports, Minnesota ranked eighth nationally and third in per capita in exports in 2014. Minnesota had about $160 in water technology exports per person in 2014, behind only Texas and Delaware. These exports add value to the state's economy and demonstrate the international strength of our water technology industry.

EDUCATION AND RESEARCH

Minnesota's public and private colleges and universities play a critical role in training the next generation of industry workers. These institutions, along with private companies, drive water technology innovation with cutting-edge research. Major state investments augment research and development with programs such as the Legislative-Citizen Commission on Minnesota Resources and the Clean Water Fund.

For example, The University of Minnesota's Discovery, Research, and Innovation Economy (MnDRIVE) program funds research in emerging industries, such as a project that's working to develop ways to use organisms to clean up polluted water and collaborating with industry to apply this research to solve business and environmental problems.



Minnesota's emerging water cluster

Minnesota has a strong core water industry that grew three times faster than industry overall in the state in the past decade. This growth is due in no small part to the state's position as headquarters for several of the world's leading water industry companies, as well as for life sciences, biotechnology, and food and agriculture businesses that place high demand on water products. In addition, water industry leaders are increasingly engaging with each other and with public partners to explore ways to grow the state's water industry. These dynamics indicate an emerging water cluster in Minnesota. By growing Minnesota's water cluster, the state can form public-private partnerships, drive economic development and support local jobs.

What is a Cluster?

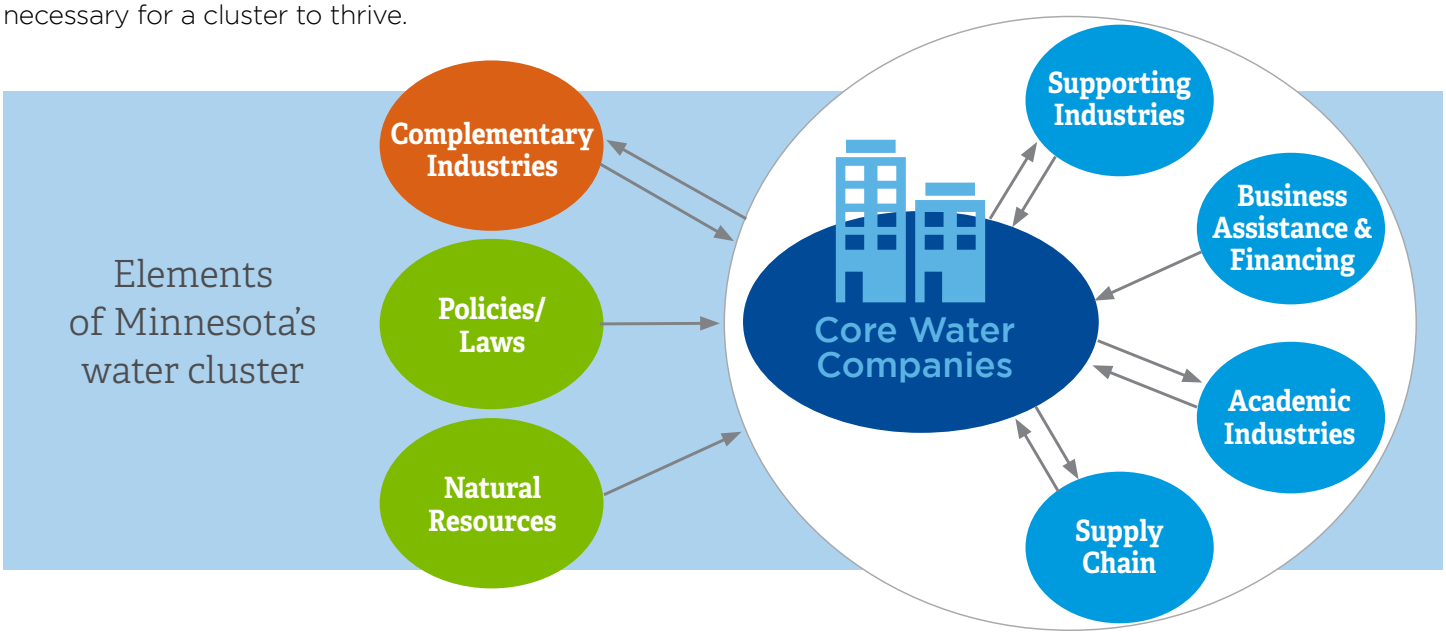
A cluster is a geographic grouping of companies, research institutions, public organizations, specialized talent and local assets focused on a specific sector or type of enterprise. Clusters can be a powerful mechanism for increasing productivity, transferring and leveraging knowledge to foster innovation, sharing skills and experience to improve commercialization of products, and increasing market share. By encouraging clusters rather than focusing on individual firms, a region can increase its competitiveness, drive innovation, boost production of tradable products and services, and create new workforce opportunities.

We Can Grow the Minnesota Water Cluster by:

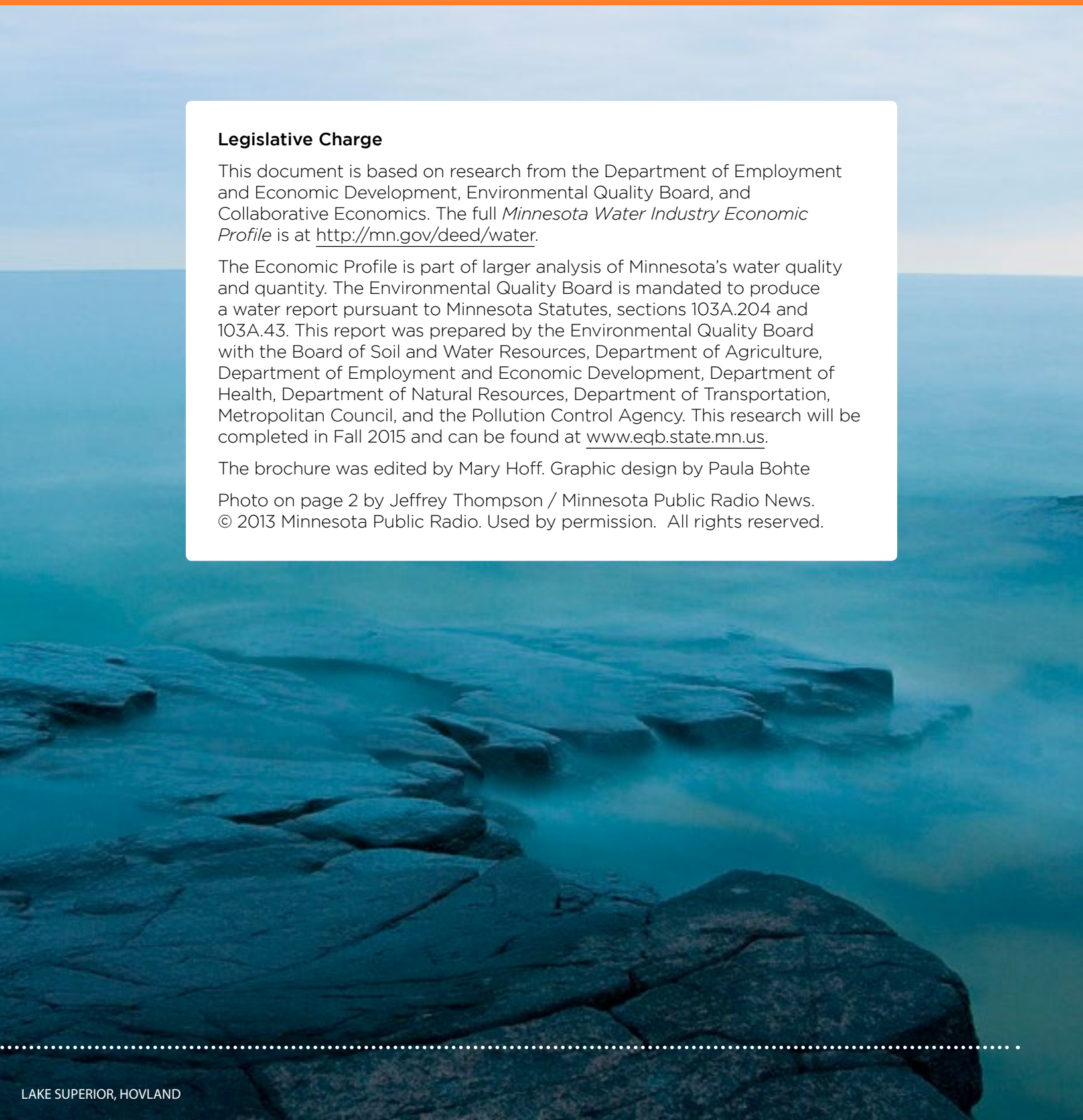
- fostering partnerships
- incubating new technologies
- pursuing federal grants and private investment
- creating a Minnesota water tech brand

Connecting Minnesota's water cluster

Department of Employment and Economic Development and Minneapolis Saint Paul Regional Economic Development Partnership (Greater MSP), a planning organization committed to growing the regional economy, host an annual Water Technology Business Summit. In 2014, the inaugural Summit brought together 150 public and private sector leaders to talk about strategies for developing the industry. Efforts like these, build the networks necessary for a cluster to thrive.



EMPLOYMENT AND ECONOMIC DEVELOPMENT



Legislative Charge

This document is based on research from the Department of Employment and Economic Development, Environmental Quality Board, and Collaborative Economics. The full *Minnesota Water Industry Economic Profile* is at http://mn.gov/deed/water.

The Economic Profile is part of larger analysis of Minnesota's water quality and quantity. The Environmental Quality Board is mandated to produce a water report pursuant to Minnesota Statutes, sections 103A.204 and 103A.43. This report was prepared by the Environmental Quality Board with the Board of Soil and Water Resources, Department of Agriculture, Department of Employment and Economic Development, Department of Health, Department of Natural Resources, Department of Transportation, Metropolitan Council, and the Pollution Control Agency. This research will be completed in Fall 2015 and can be found at www.eqb.state.mn.us.

The brochure was edited by Mary Hoff. Graphic design by Paula Bohte

Photo on page 2 by Jeffrey Thompson / Minnesota Public Radio News.

LAKE SUPERIOR, HOVLAND